## Claims

1. A constant current circuit characterized by,

after connecting a sampling capacitor connected between a gate and a source of a transistor and a drain of the transistor to a reference current source and setting a voltage across the sampling capacitor to a voltage between the gate and the source produced during the transistor is driven by a reference current of the reference current source,

cutting off the connection among the sampling capacitor, the transistor and the reference current source, as well as connecting the drain of the transistor to a driving target, and driving the driving target by a current of the transistor due to the voltage between the gate and the source which is set in the sampling capacitor.

2. The constant current circuit according to claim 1, characterized by repeating a period for setting the voltage across the sampling capacitor and a period for driving the driving target.

3. A flat display device constructed so that a display section made of pixels arranged in a matrix form, a vertical driving circuit for sequentially selecting the pixels of the display section through gate lines, and a horizontal driving circuit for driving pixels selected through the gate lines, by signal lines of the display section,

characterized in that:

the horizontal driving circuit has:

a digital-to-analog conversion circuit for performing digital-to-analog conversion processing of

gradation data indicative of gradations of the pixels; and

a buffer circuit for driving the signal lines by means of an output signal from the digital-to-analog conversion circuit;

the buffer circuit drives the signal lines by a source follower circuit formed by connecting a constant current circuit to a source of a transistor; and

the constant current circuit, after connecting a sampling capacitor connected between a gate and a source of a transistor and a drain of the transistor to a reference current source and setting a voltage across the sampling capacitor to a voltage between the gate and the source produced during the transistor is driven by a reference current of the reference current source, cuts off the connection among the sampling capacitor, the transistor and the reference current source, as well as connects the drain of the transistor to a driving target and drives the driving target by a current of the transistor due to the voltage between the gate and the source which is set in the sampling capacitor.

4. The flat display device according to claim 3, characterized by:

repeating a period for setting the voltage across the sampling capacitor and a period for driving the driving target,

the period for setting the voltage across the sampling capacitor being set as a period for precharge of the display section.